



DR. ZYME™

Enzyme Odor Controller and Eliminator

Provides Immediate Odor Relief...Then Eliminates the Odor Source



- Removes stale and unpleasant odors
- Gives long-lasting odor control by removing the residues that cause the odor
- Penetrates deep into porous surfaces to remove odors from hard-to-reach places
- Up to 100 million enzyme-producing bacteria per milliliter

Greatly reduces labor time!

PRODUCT FEATURES & BENEFITS

- Leaves a pleasant fragrance behind
- Digests odors at the source
- Increases efficiency
- High bacteria count
- Easy to use spray attachment



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Atlanta – Honolulu
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Consult the product label for complete directions and precautions before using. Suitable for use in non-processing areas of Federally inspected meat and poultry plants.



DR. ZYME™

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Provides Immediate Odor Relief...Then Eliminates the Odor Source

INDUSTRIES / CLIENTS

- Apartments
- Animal Clinics
- Shopping Malls
- Hospitals
- Hotels and Motels
- Park and Recreation Facilities
- Bowling Lanes
- Schools
- Country Clubs
- Office Buildings
- Industrial/Manufacturing Facilities
- Sanitation Departments

AREAS OF APPLICATION

- Shower
- Floors
- Locker Rooms
- Kitchens

USER BENEFITS

DR. ZYME penetrates into water-safe porous materials without harming them to remove odors at their source in hard to reach places. The beneficial, naturally occurring bacteria are present in high numbers to handle difficult organic odor problems.

These powerful bacteria are safe on carpets, upholstery, wall coverings and other surfaces not harmed by water. A pleasant fragrance masks odors; then the bacteria/enzyme action digests the source and eliminates the odor.

TECHNICAL SPECIFICATIONS

Physical State	LIQUID	Viscosity	NON-VISCOUS
Color	TAN-WHITE	Odor	CHERRY-VANILLA
Appearance	OPAQUE	pH	9
Specific Gravity	1.04	Evaporation Rate	0.1
Percent Volatile (Volume)	97.6	Evaporation Rate (BuAc=1)	0
VOC Content (g/L)	12.5	VOC Content (%)	1.2
Vapor Density (Air = 1.0)	0.6	Vapor Pressure	18 mmHg @ 70°F
Boiling Point/Range	210°F	Solubility	COMPLETELY SOLUBLE

PRODUCT CODE: 12020530

DR. ZYME™

ENZYME ODOR CONTROLLER AND ELIMINATOR

Product Features & Benefits

- **Immediate odor relief** plus long-lasting control
- **Masks offensive odors** with a pleasant fragrance on contact
- Works effectively on strong odors from organic waste residue
- **Nonstaining** - can be used safely on fabrics and surfaces not harmed by water
- Easy-to-apply spray bottles



Industry / Clients

- Hospitals
- Nursing Homes
- Restaurants
- Hotels / Resorts
- Schools / Universities
- Office Buildings
- Building Maintenance
- Apartment Complexes
- Municipalities
- Day Care Centers

Areas of Use

- Carpet
- Fabric
- Tile
- Grout
- Mats

Suitable for use as a biological cleaner and deodorizer in nonprocessing areas of U.S. Federally inspected meat and poultry plants. Consult the product label for complete directions and precautions before using this product.

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1M303



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Flash Point > 201 °F / > 94 °C

Method Seta closed cup

Autoignition Temperature No information available.

Flammability Limits in Air %: Not applicable.

Upper: No data available **Lower:** No data available

Suitable Extinguishing Media

Water spray. Foam. Carbon dioxide (CO2). Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

Material can create slippery conditions.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, NOHSC (approved or equivalent) and full protective gear.

NFPA Health 1

Flammability 1

Instability 0

HMIS Health 1

Flammability 1

Instability 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.

Environmental Precautions

No special environmental precautions required.

Methods for Containment

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Neutralizing Agent

Not applicable.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin, eyes and clothing
Avoid breathing vapors or mists

Storage

Store in original container
Keep containers tightly closed in a dry, cool and well-ventilated place

Storage Temperature

Minimum 1 °C **Maximum** 40 °C

Storage Conditions

Indoor **Outdoor** **Heated** **Refrigerated**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ISHL	Korea	ACGIH TLV
Isopropyl alcohol	ACL: 200 ppm	STEL: 400 ppm STEL: 980 mg/m ³ TWA: 200 ppm TWA: 480 mg/m ³	TWA: 200 ppm STEL: 400 ppm

Engineering Measures

Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Respiratory Protection

In case of inadequate ventilation wear respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Eye/Face Protection

Safety glasses with side-shields.

Hand Protection

Protective gloves

Skin Protection

For prolonged or repeated contact, use protective gloves with appropriate chemical resistance.

General Hygiene Considerations

Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Opaque

Color

white - Tan

Physical state

liquid

Odor

Cherry - Vanilla

Issuing Date 01/04/2016

Odor Threshold	No data available
pH	9.1
Melting Point/Range	No data available
Boiling Point/Range	99 °C
Flash Point	> 94 °C
Method	Seta closed cup
Evaporation Rate	0.59 (Butyl acetate=1)
Vapor Pressure	1.99 mmHg @ 70°F
Solubility	Completely soluble
Vapor Density	0.6 (Air = 1.0)
Specific Gravity	1.032
Autoignition Temperature	No information available.
Viscosity	Non viscous
Molecular Weight	No data available
Percent Volatile (Volume)	0
VOC Content (%)	1.2
VOC Content (g/L)	0

10. STABILITY AND REACTIVITY

Chemical Stability	Stable. Hazardous polymerization does not occur.
Conditions to Avoid	None known.
Incompatible Products	Strong oxidizing agents, Aldehydes, Acids, Bases.
Hazardous Decomposition Products	Carbon oxides.
Possibility of Hazardous Reactions	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Product Information

Principle Route of Exposure Skin contact, Eye contact, Inhalation.
 0.0578 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

Oral LD50 60,000.72 mg/kg
Dermal LD50 200,202.40 mg/kg

Inhalation LC50
Gas Not applicable
Mist 210.21 mg/L
Vapor not applicable

Primary Routes of Entry None known.

Main Symptoms

Acute Effects:

Eyes Causes eye irritation.
Skin May cause skin irritation. While the bacteria in this product are nonpathogenic, contact with open sores or cuts can cause opportunistic infections in immuno-suppressed Individuals.
Inhalation May cause irritation of respiratory tract.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects: None known.

Target Organ Effects None known.

Aggravated Medical Conditions Skin disorders, Respiratory disorders.

Component Information

Acute Toxicity

Component	Oral LD50	Dermal LD50	Inhalation LC50	Draize Test	Other
Water, distilled, conductivity or of similar purity	> 90 mL/kg (Rat)	Not applicable		no data available	no data available
Sodium chloride	= 3 g/kg (Rat)	Not applicable	> 42 g/m ³ (Rat) 1 h	no data available	no data available
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m ³ (Rat) 4 h	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
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Isopropyl alcohol	no data available	no data available	no data available	no data available.	Skin, Eyes, Respiratory system
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Carcinogenicity Not listed substance on Carcinogenic database does not represent on this Section.

12. ECOLOGICAL INFORMATION

Product Information No data available

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Crustacea	log Pow
Sodium chloride	Not applicable	LC50 5560 - 6080 mg/L Lepomis macrochirus 96 h LC50 = 12946 mg/L Lepomis macrochirus 96 h LC50 6020 - 7070 mg/L Pimephales promelas 96 h LC50 = 7050 mg/L Pimephales promelas 96 h LC50 6420 - 6700 mg/L Pimephales promelas 96 h LC50 4747 - 7824 mg/L Oncorhynchus mykiss 96 h	no data available	1000: 48 h Daphnia magna mg/L EC50 340.7 - 469.2: 48 h Daphnia magna mg/L EC50 Static	N/A
Isopropyl alcohol	EC50 > 1000 mg/L Desmodesmus subspicatus 96 h EC50 > 1000 mg/L Desmodesmus subspicatus 72 h	LC50 = 9640 mg/L Pimephales promelas 96 h LC50 = 11130 mg/L Pimephales promelas 96 h LC50 > 1400000 µg/L Lepomis macrochirus 96 h	EC50 = 35390 mg/L 5 min	13299: 48 h Daphnia magna mg/L EC50	0.05

Ecotoxicity effects No information available

Persistence and Degradability

No information available

Bioaccumulation

No information available

Mobility

No information available

13. DISPOSAL CONSIDERATIONS

Product Disposal

Dispose of in accordance with local regulations.

Container Disposal

Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

IATA Not regulated

IMDG/IMO Not regulated

ANTT

15. REGULATORY INFORMATION

National regulations:

Not regulated/listed substance on Korean TCCA, ISHL, Dangerous goods Safety Management Law does not represent on this Section.

Component	Dangerous Goods Safety Management Law	Korea - ISHA - Hazardous Substances Subject to Control	Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring - Acids and Alkalis	Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring - Dust
Isopropyl alcohol	Class 4 Flammable Liquids 400 L Alcohol, denatured	not applicable	not applicable	not applicable

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Component	Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring - Gas-Phase Substances	Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring - Metals	Korea - ISHA - Harmful Agents Subject to Work Environment Monitoring - Organic Compounds	Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination - Acids and Alkalis
Isopropyl alcohol	not applicable	not applicable	0	not applicable

Component	Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination - Dust	Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination - Gas-Phase Substances	Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination - Metals	Korea - ISHA - Harmful Agents Subject to Workers Requiring Health Examination - Organic Compounds
Isopropyl alcohol	not applicable	not applicable	not applicable	0

16. OTHER INFORMATION

Prepared By Sang Hee Lee
 Reason for Revision No information available.
 Glossary No information available.
 List of References. No information available.

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